

WHAT IS CLAIMED IS:

- 1 1. A rapid feed paintball loader for use on a paintball gun, the
2 paintball loader comprising:
3 a container for holding a plurality of paintballs;
4 a drive cone rotatably mounted on a bottom portion of the container,
5 said drive cone having a top surface that slopes downward from a center
6 axis of said drive cone;
7 an exit tube exiting from the bottom portion of the container and
8 leading to an inlet tube of the paintball gun, said exit tube having a sloped
9 exit portion;
10 a plurality of fins affixed to the top surface of the drive cone, each
11 fin having a top surface and forming a gap with an adjacent fin large
12 enough to accommodate a paintball;
13 a catch arm mounted on an interior surface of the container adjacent
14 to the sloped exit portion of the exit tube, said catch arm being mounted at
15 a height which is above the top surface of the fins and which is
16 approximately equal to the radius of a paintball;
17 a motor that rotates the drive cone; and
18 means for actuating the motor upon demand.

1 2. The rapid feed paintball loader of claim 1, wherein the motor
2 is an electric motor powered by a power supply.

1 3. The rapid feed paintball loader of claim 2, wherein the power
2 supply is a battery.

1 4. The rapid feed paintball loader of claim 1, the means for
2 actuating the motor upon demand includes a detector for detecting a
3 presence of paintballs at a selected position within the exit tube.

1 5. The rapid feed paintball loader of claim 4, wherein said
2 detector is an electro-mechanical switch located within the exit tube.

1 6. The rapid feed paintball loader of claim 5, wherein the
2 electro-mechanical switch includes an actuating arm located in the exit
3 tube and a contact switch connected to the motor, whereby each paintball
4 entering the exit tube actuates the actuating arm which forces the contact
5 switch to disengage the motor.

1 7. The rapid feed paintball loader of claim 4, wherein said
2 detector is an infrared sensor.

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1 8. The rapid feed paintball loader of claim 4, wherein said
2 detector is an optical sensor.

1 9 The rapid feed paintball loader of claim 4, further comprising
2 a microprocessor communicating with the detector and the motor.

1 ~~10~~¹⁵ The rapid feed paintball loader of claim 4, wherein said means
2 for actuating the motor upon demand includes a microprocessor which
3 disengages the motor when receiving a signal from the detector that the
4 presence of paintballs is detected in the exit tube.

1 ~~11~~¹⁶ The rapid feed paintball loader of claim ~~10~~¹⁵ wherein said
2 microprocessor momentarily reverses a rotational direction of the motor
3 when said microprocessor detects a specified increase in torque output
4 from the motor.

1 ~~12~~¹⁰ The rapid feed paintball loader of claim 9, further comprising
2 a display positioned on the container and wherein said microprocessor
3 displays relevant data to an operator of the paintball gun on the display.

1 ~~13~~¹³ The rapid feed paintball loader of claim 13 wherein said timer
2 emits an audio warning after a preselected time has elapsed.

1 16 The rapid feed paintball loader of claim 13 wherein said time
2 provides a vibratory alert after a preselected time has elapsed.

1 ~~17~~ The rapid feed paintball loader of claim 1 wherein each fin
2 has a height less than the radius of a paintball.

1 18. The rapid feed paintball loader of claim 1 wherein the sloped
2 exit portion has a slope approximately equivalent to the slope of the top
3 surface of the drive cone.

1 ~~18~~ ¹⁹ 19. The rapid feed paintball loader of claim 1 wherein the fins are
2 vertical.

1 ~~20~~ The rapid feed paintball loader of claim 1 wherein the
2 plurality of fins spiral outwardly from the center axis of the drive cone and
3 rearwardly from the direction of rotation of the drive cone.

1 *Sub 3* *20* 21. A rapid feed paintball loader for use on a paintball gun, the
2 paintball loader comprising:
3 a container for holding a plurality of paintballs;
4 a drive cone rotatably mounted on a bottom portion of the container;
5 an exit tube exiting from a bottom portion of the container and
6 leading to an inlet tube of the paintball gun;
7 a plurality of fins affixed to the top surface of the drive cone, said
8 plurality of fins spiraling outwardly from the center axis of the drive cone,
9 each fin having a top surface and forming a gap with an adjacent fin large
10 enough to accommodate a paintball;
11 a catch arm mounted on an interior surface of the container adjacent
12 to the exit tube, said catch arm being mounted at a height which is above
13 the top surface of the fins and which is approximately equal to the radius
14 of a paintball;
15 motor that rotates the drive cone; and means for actuating the motor
16 upon demand.

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1 A rapid feed paintball loader for use on a paintball gun, the
2 paintball loader comprising:
3 a container for holding a plurality of paintballs;
4 a plurality of fins located at a bottom portion of the container, each
5 fin having a top surface and forming a gap with an adjacent fin large
6 enough to accommodate a paintball;
7 means for rotating the plurality of fins about an axis running
8 perpendicularly through the bottom portion of the container;
9 an exit tube exiting from the bottom portion of the container and
10 leading to an inlet tube of the paintball gun, said exit tube having a sloped
11 exit portion;
12 a catch arm mounted on an interior surface of the container adjacent
13 to the sloped exit portion of the exit tube, said catch arm being mounted at
14 a height which is above the top surface of the fins and which is
15 approximately equal to the radius of a paintball;
16 a motor that rotates the drive cone; and
17 means for actuating the motor upon demand.

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